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Scientometric Assessment of Publications on Electronic Resource Management and Electronic Resource Management System during 2000 - 2019

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ABSTRACT

Electronic Resource Management is an eminent research area, and Electronic Resource Management System has become now an inevitable part of any academic library system. As such, considerable literature has been published on ERM and ERMS. Therefore, this article attempts to analyze the growth of scholar's research output in the areas of electronic resource management, electronic resource management system during the period 2000 to 2019. This article examines 347 publications across the globe on the topic of "ERM" and "ERMS". The analysis on these topics has been done, taking into account the total research output of these main areas as reflected in the SCOPUS database. The present study analyses the year-wise cumulative growth of research publications, list of top highly cited articles, list of core journals, the pattern of authorship, most prolific authors, types of publications preferred by the authors in the field of electronic resource management and electronic resource management system.

KEYWORDS

Scientometrics, Electronic Resource Management (ERM), Electronic Resource Management System (ERMS), SCOPUS, Research Output.

1. INTRODUCTION

Citation analysis is very important and useful for measuring the impact and contributions of different researchers on particular topics. It will help not only to identify the most relevant data but also in analysing the current trends and situations regarding specific subject areas. It is imperative for researchers to identify the literature like articles, conference papers, and reviews, etc. to understand the current trends and analysis before selecting the area for research. Today, in the international scenario, E-Resources are most the crucial components of the digital collection development and technical process of the libraries. Even in India, nowadays, most libraries are reducing their print collection budget, investing more and more in subscribing electronic resources for providing better services most efficiently. Management of all electronic resources, including acquisition, administration, licensing and renewals, are becoming more sophisticated and challenging than ever (Black and Collins, 2010). This has forced all library professionals to think of faster mechanisms for selecting, archiving, managing, and retrieving electronic resources. This is how ERM and especially open source Electronic Resource Management System (ERMS) are relatively becoming more popular in the LIS fraternity. According to (Duranceau, 2004), an ERMS is: “A system that allows information and workflow management necessary to effectively operate the selection, evaluation, acquisition, maintenance, renewal/deletion and provision of information and access to electronic resources in accordance with their licenses and terms of trade”. As far as ERMS is concerned, in western countries, Library Professionals and Content Analyst have started working on the development and implemented ERMS in their respective academic libraries whereas, in developing countries especially like India, this concept is comparatively new. Therefore, creating awareness about ERM and ERMS is very crucial at this point.

This study aims to make an assessment of the research publications carried out by scholars in the field of ERM and ERMS from the period 2000 to 2019 as covered in the SCOPUS database. This scientometric study helps all library professionals update themselves with the trends and developments in the dynamic area of ERM and ERMS.

CONCEPTS

What is Electronic Resource Management

Having all these interrogations, now it is essential to understand the clear, distinct concept of ERM and ERMS.

Considering the various difficulties faced when attempting to manage electronic contents, it should come as no surprise that Electronic Resource Management is one of the most important and very often discussed subjects in the field of Library and Information Management. ERM stands for Electronic Resource Management. According to Marshall Breeding (Breeding, 2004), there are two aspects of managing electronic resources:

1. The front-end details of delivering the content to the library users; and
2. Managing the business details of back-end staff functions related to acquisition, payment, and licensing.

What is the Electronic Resource Management System?

There are various steps involved in the management of electronic resources, i.e. discovery of resources, trial, selection, licensing, acquisition, service support, evaluation monitor and renewal or cancellation. There are tools to manage the above-mentioned workflow and lifecycle of e-resources, which is called Electronic Resource Management Systems, which is a useful tool for

library and library professionals. (Breeding, 2008) defines Electronic Resource Management System as “An ERMS is a software module that assists the library in managing all the details related to its subscriptions to electronic content. It focuses primarily on article content delivered in electronic journals and databases that aggregate collections of e-journals.”

(Grog and Collins, 2011) mentioned that Librarians have been struggling with how best to manage electronic resources for nearly a decade, as the information economy has inevitably moved to electronic materials. Grog and Collins surveyed many librarians and found out librarians’ expectations and listed their top six functions that an ERMS should handle: Workflow Management, License Management, Statistics Management, Storage of Administrative Information, Acquisition management and interoperability between library systems. It is very important to note that none of which had been met well by any available ERMS product. It indicates that, even after a decade, no single ERMS is perfect.

2. RELATED LITERATURE

A large number of scientometric and bibliometric studies have been conducted on the various research topics of Library Science as well as Non-Library and Information Science areas in India and abroad. (Hawkins, 2010) studied the bibliometric characteristics of e-Journals in the field of library and information science. He identified important topics covered by e-Journal articles in LIS and identified the top 28 e-Journals along with several articles on the diverse subjects they published. (Jeevan, 2002) analyzed scholarly publications generated by the Structural Engineering Research Centre (SERC) between 2002 and 2006. The authors observed that most publications had been documented other than journals such as conference proceedings.

As far as electronic resource management area is concerned, several articles and case studies have been written and published on ERM, ERMS products and its implementation include (Harvell, 2005); (Collins, 2008); (Grogg, 2008); (White & Sanders, 2009); (Kerr, 2010); (Bullock, 2019) evident that management of electronic resources and ERM system has its own importance and benefits. There have been multiple articles published which talks about standards related to ERM and ERMS (Pesch, 2008) and (McQuillan, 2012), core competencies required for Electronic Resource Librarians (NASIG, 2016); (Hartnett, 2014); (Resnick, 2009) and exclusive benefits of ERMS (Ballard & Lang, 2007).

Most of the library professionals are aware of the benefits of electronic resources like simultaneous multiple users can use, numerous searching strategies can be applied, sharing of knowledge becomes easy, 24 x 7 access, etc. but very few people are aware of benefits of ERM and especially ERMS. With the ever-changing behaviour of users and due to exponential growth in electronic resources management becomes more crucial than ever. Thus significant important advantages of ERMS are stated here for creating more awareness amongst library professionals.

1. ERMS facilitates the management of electronic resources effectively and efficiently.
2. The library can store, retrieve and compare License agreements of subscribed electronic contents at a single platform.
3. ERMS helps in analysing the usage of eResources. i.e. cost per use.
4. It serves as a single platform for managing all e-Resources.
5. In case of renewal, alert notification through email.
6. It will help you to create an A-Z list of all e-Journals.
7. Overall, it helps to save the time of library staff.
8. Small local server/space are needed to host or implement ERMS.

9. Customized email notification at the workflow stage.
10. Good open source ERMS product is available and more yet to come.

In a nutshell, we can state that there have been adequate articles talks about the various approaches to ERM and ERMS. Still, as far as the growth of publications on Electronic Resource Management and its Systems are concerned, we have not come across any scientometric studies so far. Since the Electronic Resource Management area is a niche, limited articles have been published in the form of journal articles, conference papers and book chapters.

3. OBJECTIVES

This study is aimed at the scientometric assessment of publications on Electronic Resource Management, Electronic Resource Management System and allied areas, indexed in the SCOPUS database from 2000-2019.

The specific objectives of this study are as below:

1. To identify the year-wise growth of research publications in the area of Electronic Resource Management and Electronic Resource Management Systems.
2. To get an overview of the citation and find out highly cited research articles on ERM and ERMS.
3. To find out topmost five journals wherein ERM, ERMS, and related articles have published.
4. Study the pattern of collaboration amongst authors writing on ERM & ERMS and identify the most prolific authors (major contributors) to these fields.
5. To identify the trends of types of publications.

4. SIGNIFICANCE OF THE STUDY

In the field of Library and Information Science, ERM and ERMS have their own importance in the current scenario but seldom acknowledged by the working professionals, which affects the overall library functionality. So, we have attempted to create more awareness and its usefulness by discussing its long term prospects for its future.

Especially for developing countries like India, ERMS is a very new area for future research. Thus, this study provides practical information to Librarians and professionals who look for further studies with potentially high citations, and also would be helpful for LIS researchers to conduct better researches that eventually could lead to more exhaustive research and publications in the area of ERM and ERMS. Overall, it will help library professionals who are curious to know about the development and growth of this field.

5. METHODOLOGY AND DATA SOURCE

Publications from various countries in Electronic Resource Management and Electronic Resource Management System were sourced using a specified keyword from the SCOPUS database (<http://www.scopus.com>) for the years 2000 to 2019. There are multiple reasons for choosing the SCOPUS database for this study. The primary goal is its superior multidisciplinary coverage. Over and above other reasons includes high citation coverage, availability and user-friendliness of various analysis tools in the platform (Bar & Ilan, 2010; Bosman et al. 2006; Chadegani, Salehi, and Yunus 2013). To find the most precise research, different keywords have been preferred for this article.

The records required for the study have been downloaded using the following search strategy: (TITLE-ABS-KEY ("Electronic Resource Management") OR TITLE-ABS-KEY ("Electronic Resource Management System")). The search yielded a total number of 378 documents for the selected research areas. These records were imported in MS-Excel for detailed analysis and scrutinizing. Citation data was obtained from the date of publications until September 2020.

6. ANALYSIS AND INTERPRETATION

The data collected is analyzed in order to achieve the objectives set out above. Microsoft Excel v. 2013 is used to analyze the data, preparing charts and display the results. All these analysis and interpretation of data is presented in succeeding sections.

Table 1, Figure 1 illustrates the year-wise growth of research articles published from 2000 to 2019. The data extracted shows that articles on ERM, ERMS and associated field have been published since 1998, and actual publications have started been published after 2003. Since this article has selected the 2000-2019 period for analysis, one article published in 1998 has not been considered.

In the year 2013, the total number of articles 46 (13.65%) articles were published in the selected research area. It is important to note that the year 2013 was the most productive year in terms of the number of publications followed by 2008 total 37 (10.98%) publications on the selected area of research. The least productive years were 2000 - 2002. No single article was published during these three years.

6.1 Year-wise Publication Trend analysis

Year	Total Number of Articles Published (share of total in bracket)	Cumulative Number of Publications	Total Citations	Average Citations per Article
2000	0 (0)	0	0	0
2001	0 (0)	0	0	0
2002	0 (0)	0	0	0
2003	4 (1.19%)	4	30	7.50
2004	13 (3.86%)	17	42	5.25
2005	23 (6.82%)	40	157	8.26
2006	13 (3.86%)	53	69	6.27
2007	17 (5.04%)	70	78	5.57
2008	37 (10.98%)	107	132	5.07
2009	19 (5.64%)	126	155	9.68
2010	25 (7.42%)	151	84	4.42
2011	21 (6.23%)	172	114	7.12
2012	15 (4.45%)	187	66	5.5
2013	46 (13.65%)	233	91	3.37
2014	21 (6.23%)	254	45	3.46
2015	23 (6.82%)	277	35	2.33
2016	22 (6.53%)	299	21	1.9
2017	17 (5.04%)	316	9	1.5
2018	16 (4.75%)	332	1	0.33
2019	15 (1.48%)	347	1	0.33
Compound Annual Growth Rate (CAGR) : 32.17 %				

Table 1. Year-wise growth of publications in ERM and ERMS

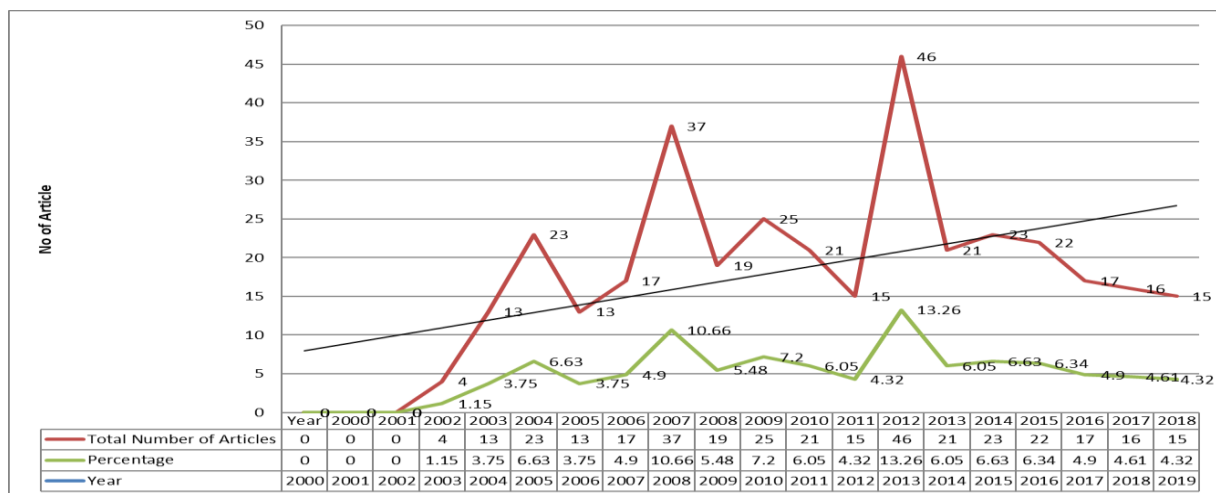


Figure 1. Year-wise growth of publications in ERM and ERMS



Figure 2. Cumulative number of publications

However, the world output in ERM field was 347 publications; it witnessed compound annual growth rate (CAGR) of 32.17% during 2003-2019. Since the concept of ERM and ERM Systems started evolving after the guidelines published by Digital Library Federation (DLF) <https://old.diglib.org/pubs/dlf102/>, Electronic Resource Management Initiative and NISO's ERM standards (Jewel, 2004), the number of research articles were published after above mentioned well-accepted guidelines in 2003.

6.2 HIGHLY CITED RESEARCH ARTICLES ON ERM AND ERMS

Tables 2 depict top highly cited papers in ERM, ERMS and allied areas including details such as the title of the paper, author, year of publications and number of citations. The total 337 publications on this area have received 1129 citations in all, out of which articles having more than 10 citations are shortlisted and given here. The highest number of citations is 39, which were published in 2009, followed by 31 citations for publications in the same year. The exclusive articles written by Maria Collins published in 2008 and 2005 has received 25 and 22 citations, respectively. The rest of the articles received citations ranging from 21 to 11 in different years.

List of highly cited articles on ERM and ERMS with more than 10 Citations

Author(s)	Title	Source of Publication	Year	Number of Citations
Park J.-R., Lu C., Marion L.	Cataloging professionals in the digital environment: A content analysis of job descriptions.	Journal of the American Society for Information Science and Technology, Vol. 60 (4), pp. 844-857.	2009	39
Park J.-R., Lu C.	Metadata professionals: Roles and competencies as reflected in job announcements, 2003-2006.	Cataloging and Classification Quarterly, Vol. 47 (2), pp. 145-160.	2009	31
Collins M.	Electronic Resource Management Systems (ERMS) Review.	Serials Review, Vol. 34 (4), pp. 267-299.	2008	25
Collins M.	Electronic Journal Forum: Electronic resource management systems: Understanding the players and how to make the right choice for your library.	Serials Review, Vol. 31 (2), pp. 125-140.	2005	22
Sadeh T., Ellingsen M.	Electronic resource management systems: The need and the realisation.	New Library World, Vol. 106, pp. 208-218.	2005	21
Grover D., Fons T.	The innovative electronic resource management system: A development partnership.	Serials Review, Vol. 30 (2), 110-116.	2004	21
Skaggs B.L., Poe J.W., Stevens K.W.	One-stop shopping: A perspective on the evolution of electronic resources management	OCLC Systems and Services, Vol. 22 (3), pp. 192-206.	2006	18
Frederiksen L., Cummings J., Cummings L., Carroll D.	Ebooks and interlibrary loan: Licensed to fill?.	Journal of Interlibrary Loan, Document Delivery and Electronic Reserve, Vol. 21 (3), pp. 117-131.	2011	16

Mischo W.H., Norman M.A., Shelburne W.A., Schlembach M.C.	The growth of electronic journals in libraries: Access and management issues and solutions.	Science and Technology Libraries, Vol. 29, pp. 29-59.	2006	16
Czyzyk M., Robertson N.D.M.	HERMES: The Hopkins electronic resource management system.	Information Technology and Libraries, Vol. 22 (1), pp. 12-17.	2003	16
Cole L.	A journey into e- resource administration hell	Serials Librarian, Vol. 49, pp. 141- 154.	2005	15
Mangrum S., Pozzebon M.E.	Use of collection development policies in electronic resource management.	Collection Building, Vol. 31 (3), pp. 108- 114.	2012	14
Fry, A., Rich, L.	Usability Testing for e- Resource Discovery: How Students Find and Choose e-Resources Using Library Web Sites.	Journal of Academic Librarianship, Vol. 37 (5), pp. 386-401.	2011	14
Tull L., Crum J., Davis T., Strader C.R.	Integrating and streamlining electronic resources workflows via Innovative's Electronic Resource Management.	Serials Librarian, Vol. 47 (4), 103- 124.	2005	14
Fons T., Fattig K.M., Langendorfer J.M., Daniels J.	Real ERM implementations: Notes from the field.	Serials Librarian, Vol. 56 (1-4), pp. 101-108.	2009	14
Meyer S.	Helping you buy: Electronic resource management systems.	Computers in Libraries, Vol. 25 (10), pp. 19-24.	2005	14
Pan, D., Bradbeer, G., Jurries, E.	From communication to collaboration: Blogging to troubleshoot e- resources.	Electronic Library, Vol. 29 (3), pp. 344- 353.	2011	14
Condic, K.	Uncharted waters: ERM implementation in a medium-sized academic library	Internet Reference Services Quarterly, Vol. 13 (1-4), pp. 133-145.	2008	13

Fons, T.A., Jewell, T.D.	Envisioning the future of ERM systems	Serials Librarian, Vol. 52, pp. 151- 166.	2007	13
Kornblau, A.I., Strudwick, J., Miller, W.	How Web-Scale Discovery Changes the Conversation: The Questions Librarians Should Ask Themselves	College and Undergraduate Libraries, Vol. 19, pp. 144-162.	2012	11
Pan D.	Not a one-size-fits-all solution: Lessons learned from implementing an electronic resources management system in three days.	Journal of Electronic Resources Librarianship, Vol. 21, pp. 279-292.	2009	11
Taylor D., Dodd F., Murphy J.	Open-Source Electronic Resource Management System: A Collaborative Implementation.	Serials Librarian, Vol. 58, pp. 61-72.	2010	11
Meyer, S., Collins, M.	E-Matrix-Choosing to Grow Your Own Electronic Resource Management System	Serials Review, Vol. 32 (2), pp. 103- 105.	2006	11
Wilson, K.	Beyond Library Software: New Tools for Electronic Resources Management	Serials Review, Vol. 37 (4), pp. 294- 304.	2011	11

Table 2. Top 25 highly cited research articles in ERM

6.3 TOP MOST JOURNALS

Table 3 and Figures 3 show the list of topmost journals with regard to the number of articles published in ERM and allied areas. It needs to be mentioned that, as far as ERM and ERMS is concerned, the highest number of publications were found in the journal named “Serials Librarians” (95) followed by “Serials Review” (52). The “Journal of

Electronic Resources Librarianship" was the third-highest in terms of publication with the number of articles totaling at (40) for the selected years. The Technical Service Quarterly (12) and Journal of Electronic Resources in Medical Libraries has published (10) articles on ERM during 2000-2019.

TOP 5 Most Productive Journals					
Sr. No	Name of Journals	Articles on ERM	Impact Factor of Journal	H-Index	SJR
1	Serials Librarian	95	0.46	15	0.584
2	Serials Review	52	0.33	23	0.247
3	Journal of Electronic Resources Librarianship	40	0.61	11	0.524
4	Technical Services Quarterly	12	0.16	15	0.239
5	Journal of Electronic Resources in Medical Libraries	10	0.43	10	0.161

Table 3. Top 5 Most Productive Journals

The above list of journals also contains essential information like Impact Factor of Journals, H-Index and SJR. This information will be useful to the LIS professionals and schools who wants to build their own journals collection on the subject area of ERM and System.

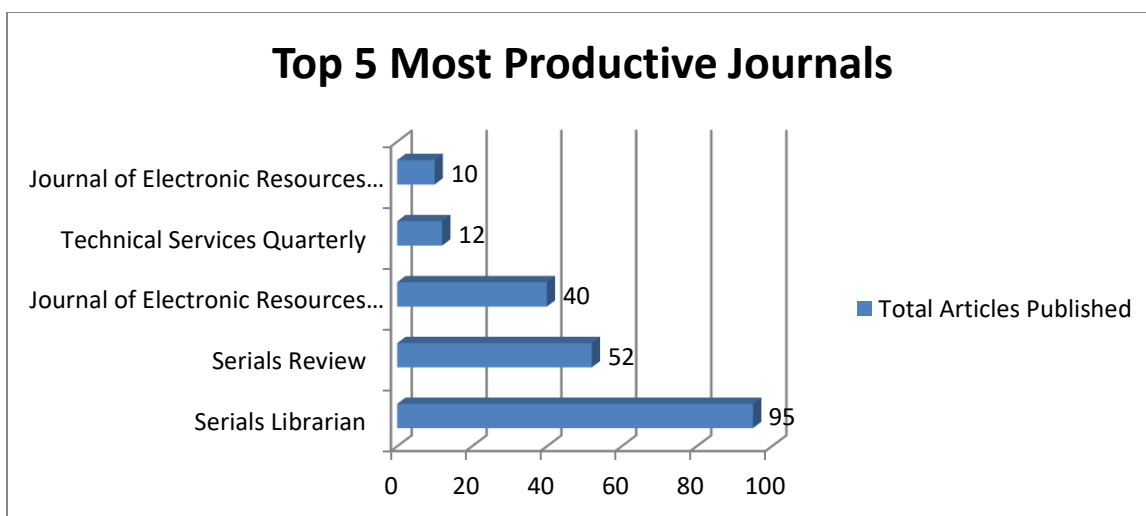


Figure 3. Top 5 Most Productive Journals

The lowest number of articles ranging from 5- 1 had appeared in journals such as, “*OCLC Systems and Services*”(5), “*Library Resources and Technical Services*”(5), “*Journal of Library Administration*”(5), “*Collection Management*”(4), “*Library Collections, Acquisition and Technical Services*” (4), “*Electronic Library*” (3) and “*Computers in Libraries*” (3), “*Library Hi Tech*” (3) and so on. In total, 234 articles were published by the journals in the area of Electronic Resource Management.

6.4 AUTHORSHIP PATTERN

The primary objective of the analysis was to know whether authors writing on ERM and allied disciplines tend to write independently, or they prefer to write in collaboration. Tables 4 and 5 demonstrate the pattern of authorship collaboration in published articles in the area of ERM and ERMS.

ERM		
Sr. No.	Authorship Pattern	Number of articles
1	Single	167
2	Two	94
3	Three	55

4	Four	17
5	Five or more than five	14

Table 4. Authorship Pattern in ERM

For ERM and allied disciplines, 167 (48.12%) of the papers were single-authored. Similar findings were noticed by (Singh, Mittal & Ahmad, 2007) in their article published in 2007. They found that single authors wrote 61% of articles on digital libraries.

As far as the collaboration of authors in the field ERM and ERMS is concerned, data shows that 94 (27.08%) published articles were co-authored followed by 55 (15.85%) were published by three authors. Nearly 4-5% of papers were written in collaboration between four and eight authors in this selected field.

The below-presented analysis shows that nearly 52% of publications have been written in collaboration. Year-wise data indicates that the authors writing on ERM not only joining hands with two or three writers but even more than three also.

Year-Wise Authorship Pattern					
Year	One Author	Two Author	Three Author	Four Author	Five or More Author
2000	0	0	0	0	0
2001	0	0	0	0	0
2002	0	0	0	0	0
2003	2	1	1	0	0
2004	6	4	1	1	1
2005	14	6	2	1	0
2006	6	4	2	1	0
2007	7	3	4	2	1
2008	20	11	5	0	1
2009	7	5	3	2	2
2010	7	10	5	1	2
2011	7	8	4	1	1
2012	6	3	4	2	0
2013	22	8	11	3	2
2014	11	8	2	0	0

2015	14	6	2	0	1
2016	10	5	4	2	1
2017	7	5	3	1	1
2018	12	3	0	0	1
2019	9	4	2	0	0
TOTAL	167	94	55	17	14

Table 5. Year-Wise Authorship Pattern

Authors from United States of America (USA) seems to have made significant contributions in this area. If we look at the most prolific authors, top five authors are from the USA. Countries like India, Canada, the United Kingdom have also contributed significantly in this area. The overall trends find that the USA writers have shown sustained interest in the electronic resource management domain.

Most Prolific Authors & Their H-Index and Citation Overview from Scopus							
Sr. No .	Name of TOP Authors	Total Articles on ERM & ERMS	Total Number of Publications	Affiliation of the Author	Country	H-index of Author	Sum of Times Cited
1	Lenore A. England	11	21	University of Maryland University College	USA	3	33 by 23 documents
2	Maria Collins	10	73	North Carolina State University	USA	10	289 by 228 documents
3	Susan Davis	6	78	University at Buffalo (UB) Libraries, State University of New York	USA	4	62 by 55 documents
4	Trisha L. Davis	6	21	Ohio State University	USA	5	108 by 90 documents
5	Rafal Kasprowski	6	10	Rice University, Houston	USA	1	6 by 6 documents

Table 6. Top 5 Most Prolific Authors

6.5 TYPE OF DOCUMENTS

The research publications on ERM and allied areas appear in a variety of forms viz. journal articles, conference papers, book chapters, books, the article in press, notes, and reviews. The primary objective of this section is to know which type of publication authors prefer to conveying their ideas.

Tables 7 & Figure 4 show the document classification (type) of distributions of publications on Electronic Resource Management and Systems. It is evident from the graphs that most research communication of knowledge has been published in the form of journals.

Types of Publications used for Communication		
Document Type	Number of Documents on ERM	Percentage
Journal Article	242	69.74%
Conference Paper	23	6.63 %
Book Chapter	38	10.95 %
Book	9	2.59 %
Article in Press	3	0.86 %
Note	6	1.73 %
Review	26	7.49 %
	347	

Table 7. Classification (type) of publications in ERM

Out of 347 documents, a total of 242 (69.44%) were Journal Articles, followed by 38 (10.95%) of the documents were published in Book Chapter, 26 (7.49%) as Review articles and 23 (6.63%) during Conferences. In contrast, only 9 (2.59%) were published in the form of Book. Here, Articles in Press and Notes had very fewer contributions, i.e. 3 (0.86%) and 6 (1.73%) respectively.

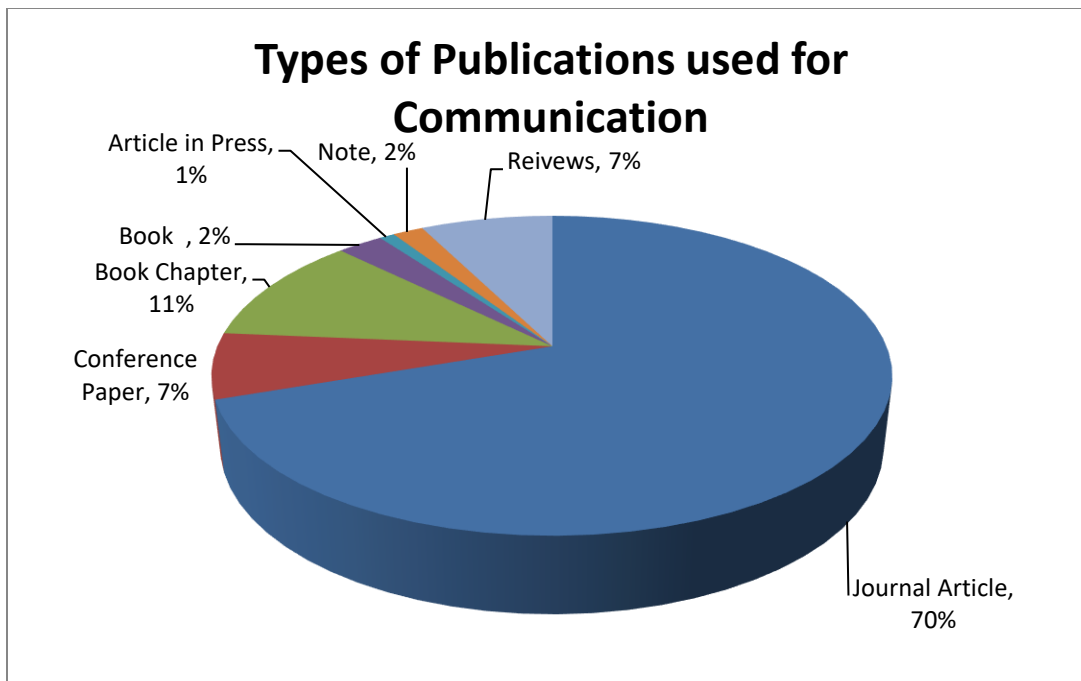


Figure 4. Classification (type) of publications in ERM and ERMS

6.7 FINDINGS AND CONCLUSIONS

The growth of publications in the field of ERM and ERMS has become a major concern for the library practitioners as they always try to keep themselves abreast with new advances in the area. Overall, this study has led us to recognize the current state of global research in the field of ERM and ERMS.

Scientometric enables a large quantity of scientific literature within a research field to be examined. The result of this Scientometric on the research publications output on ERM provided very helpful insights and the analysis revealed that the field of ERM had grown progressively during the last twenty years.

Both Electronic Resource Management and Electronic Resource Management System fields have gained momentum in the LIS domain. Notably, the Electronic Resource Management System (ERMS) is the most in-demand area for librarians in the near future.

The present study, using scientometric techniques, has examined quantitatively the contribution made by various researchers and practitioners in the field of Library and Information Science. The latter has produced a total of 347 publications over a period of 20 years from 2000 to 2019, which is an average of about 18 articles per year. Only 29 (7.12%) articles in the ERM and ERMS domain received more than 10 citations. A total of 198 (57.57%) articles received 10 or less than 10 citations, and 119 (35.31%) did not receive any citations after its publication.

The possible reason for marginal decline in the growth and less citations could be the lack of awareness about ERM and ERMS in the developing countries. Given these observations and concerns it is important that India as well as other major countries must undertake proactive measures to catalyze electronic resource management research globally and learn lessons from the USA. Here it is very important to note that, United States of America (USA) is the world leader in the field of Electronic Resource Management with largest almost 80% global publications share followed by Canada and India (nearly 4% global share). On the contrary, other countries such as UK, China, Spain, Turkey, Hong Kong, Albania etc. have very negligible global share. It means, apart from the USA, the library professionals from countries like Canada, India, UK, China and others should explore this area as research and contributes more in this field.

This study also revealed that ERM and ERMS research is increasingly becoming more allied and collaborative in nature. It signposts that, the global collaboration is also extremely important. Library Professionals from India should collaborate with USA for research on ERM and its allied discipline at global level and give more priority to areas such as Link Resolver, License Management, Troubleshoot, TERMS, Knowledgebase,

COUNTER, SUSHI, standards related to ERM etc. and contribute more toward the development of this field.

Countries such as the US and India have tremendous potential in the coming years to provide and maintain higher growth in ERM publications and citations. In order to make this field more dynamic, the library professionals from all countries need to build up their expertise and knowledge and contribute more towards the development of this area.

In view of all these findings, it is important that countries like India and others should take constructive steps to catalyze research on ERM and ERMS globally. We need to learn from countries like USA on how to manage electronic resources professionally using automated system for raising library value by providing state-of-art library electronic services with resources to the users.

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